Considering LDH concentration in nasal wash fluid as a marker in evaluating the outcome of patients with bronchiolitis in Ardabil Bu-Ali Hospital

Abstract:

Background & Objective: Estimation of bronchiolitis severity in infants is still an important issue and there are no standard methods to help physicians for better evaluation and management of clinical status of these patients. This study is intended to investigate role of nasal wash LDH as a biomarker in evaluation of the clinical outcome of patients suffering bronchiolitis in Bu Ali Hospital, Ardabil.

Methods: 100 children with bronchiolitis aged below 2 years entered the study. Nasal wash sample was extracted from all patients using 2 ml of normal saline. Samples were sent to laboratory to measure LDH level. Laboratory results as well as demographic information of children were collected and analyzed.

Result: Mean age of patients was 6.89 ± 3.74 months and 57% of them were male. 42% of patients had mild bronchiolitis and 58% of them suffered from severe bronchiolitis. LDH level of nasal wash fluid was neither related with gender ($p=0.131$) nor with age ($p=0.347$) and it was significantly lower in patients who required oxygen therapy compared with those who did not require oxygen therapy ($p<0.001$). Moreover, LDH level showed a significant negative association with hospital stay ($r=-0.570$, $p<0.001$) and bronchiolitis severity ($r=-0.440$, $p<0.001$) in a way that its concentration was significantly lower in patients with hospital stay longer than 24 hours compared with hospital stay shorter than 24 hours, and in patients with severe bronchiolitis compared with mild bronchiolitis.

Conclusion: According to results of this study, LDH measurement in nasal wash fluid can be used as a biochemical marker to evaluate clinical outcomes of bronchiolitis in children younger than 24 months. However, due to the limited number of studies in this regard and different findings in various studies, in order to be able to use nasal wash LDH for routine clinical application, prospective studies with high sample size are required.

Keywords: Lactate dehydrogenase, Bronchiolitis, Bronchiolitis severity.